

CONSTRUCTION

Use mud, save money

A new concept in housing from Bangalore

Q: Do you plan to build a nice, small place for yourself?

A: Yes.

Q: Do you have the money?

A: Hmhhh...not very much.

Not to worry. Builders and architects in Bangalore have come out with technology that helps put up a house at 60 per cent of the normal cost. No expensive bricks here. Little cement is used. It is stabilised mud blocks (SMBs) that's quite the rage among many in the city wishing for the magic of a roof over their heads.

There's really nothing off-putting about mud blocks...if you like the rural touch. M.F. Hussain has cottoned on to it. He has built an SMB residence in the Banaswadi area of Bangalore. Says his architect, V. Narasimhan: "This sort of thing is not for every one. If you can't live in a house which looks unfinished, then you can certainly plaster the walls. But then the whole thing becomes expensive. You save only on the bricks." This isn't much.

The point about mud blocks is that they aren't expensive. A 25 square feet wall costs 40 per cent less than one of standard construction. Achyutha Rao, quantity surveyor with Venkataraman Associates, one of the biggies in the trade, spells out the economics.

Each baked brick costs 90 paise. Adding for cement, sand, labour, plastering and painting, each square feet of wall costs Rs 29.60. But an SMB structure is made with local soil mixed with five per cent of cement for bonding. Also, it is not required to be plastered or painted.

All it needs is a coat of waterproof paint like Snowcem. And the price: Rs 18 per square feet.

The man to perfect SMB technology is K.S. Jagadish. This he did as chief of the centre for Application of Science and Technology for Rural Areas (ASTRA). The centre is part of the prestigious Indian Institute of Science where Jagadish teaches civil engineering.

Mud blocks are made by a machine called ASTRAM, a variant of an original model from Columbia. Jagadish has manufactured another called ITGE VOTH. Both cost the same: Rs 6,500 plus taxes and contain detailed user manuals. N. Kishen Das of Aeroweld Industries markets ASTRAM. A single machine can produce one lakh blocks. Jagadish recommends a small reconditioning after 50,000 blocks.

Now to the business of using either machines. Both ASTRAM and ITGE

VOTH are transported—an easy task in itself—to the building site. The local soil, which is pre-tested, is stabilised with a mixture of cement. This is fed to the machine and mud blocks are made. This is cured and then used much like bricks. There are advantages galore:

- There's no cost of transporting bricks from kilns.
- An SMB is twice the size of a brick. This saves time and cement. The pace of construction is fast.
- SMB is environment-friendly because no wood or coal is used to bake it.
- It is thermally more efficient.

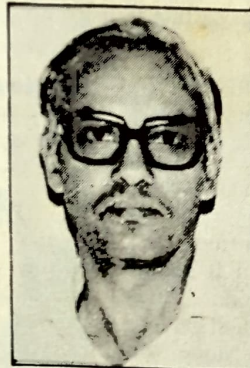
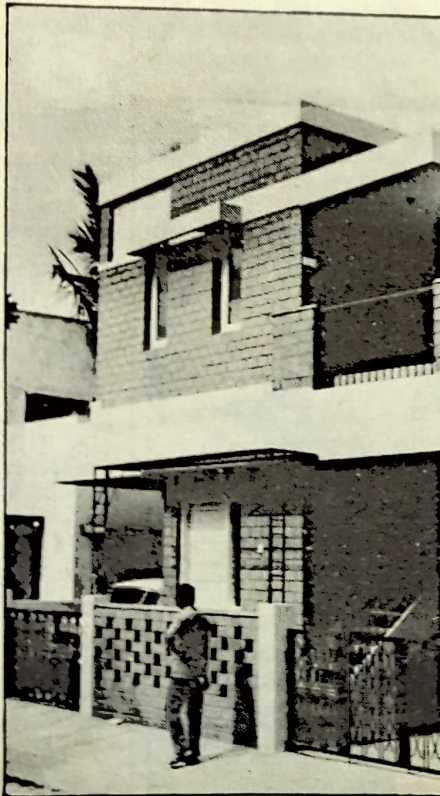
But there are headaches. Soil at the site has to be tested for clay content. "Any engineering college can check it out, but half the time I don't trust them," says Jagadish. Mrinmayee, an organisation in Bangalore, provides better service. All it requires is two kilogrammes of

seived mud. Then they advise the quantity of cement to add. Mrinmayee also checks the quality of the SMBs. Two blocks, chosen at random, suffice for the test. Soil sampling costs Rs 600 and block assaying Rs 50.

Then there is the question of aesthetics. Those who fancy the muddy looks fancy a SMB house. And many don't. Moreover, Narasimhan doesn't recommend the technology for constructions which have large spans. "I would stop at ground plus one," he says.

Clearly, mud blocks have their pluses and minuses. But from that obtuse angle of a man's pocket, the choice couldn't be clearer. •

**Pinkie Virani/
Bangalore**



A house made of stabilised mud blocks and (above) K.S. Jagadish, the man who perfected the technology